



Danthonia



Volume 5 Number 1

June 1996

NEWSLETTER OF THE AUSTRALIAN NETWORK FOR PLANT CONSERVATION

Kings Park & Botanic Gardens
and National Herbarium

25 JUL 1996

LIBRARY

Rescuing Western Australia's Endangered Flora

A joint project between
Kings Park & Botanic
Garden and Western Power

*Andrew Batty, Kings Park & Botanic
Garden, West Perth, 6005*

Some of Australia's most diverse and unusual flora occurs in Western Australia. Half of Australia's wildflowers are packed into one third of the nation's land mass, producing a spectacle of colour each spring unrivalled anywhere in the world. In the south west of the state there are over 8000 plant species with 6000 of these being found nowhere else.

Today more than 2000 threatened plant species occur in Western Australia with at least 300 of these thought to be in danger of extinction. The flora is threatened by a range of processes such as agriculture, urban development, weeds, pests and disease. In the Perth metropolitan region there are 57 plants in urgent need of conservation. Eleven of the most critically endangered species re-

quire urgent action to secure their futures.

In 1995 Western Power (Perth's electricity company) recognised the plight of Western Australia's endangered flora. A "Western Power Endangered Plant Rescue Program" commenced with Kings Park & Botanic Garden to save these critically endangered species. The three year program is the company's single largest sponsorship and is indicative of their new approach to the environment.

The rescue program includes a three year PhD research scholarship to investigate and develop conservation strategies to secure six endangered terrestrial orchid species. This may involve appropriate management of sites through an increased understanding of the species' biology or the development of propagation techniques suitable for the establishment of individuals in natural or secure bush sites.

A further eight species, five from the metropolitan region and three Eucalypt species from country regions, are being investigated

(cont. p.3)

National Coordinator's Report

Jeanette Mill

The ANPC Advisory Committee met on June 17. An application for funding from the Endangered Species Unit for the ongoing work of the ANPC was the main focus, and therefore all ANPC activities were discussed. I thank the Committee members for their continuing support and enthusiasm.

At the meeting it was agreed that it would be fitting to publish a letter of thanks and recognition from the Chair, Prof. Henry Nix, for Mark Richardson's founding role in the Network. Mark's vision and humour are greatly missed by the staff of the National Office, and we echo Henry's comments wholeheartedly. We hope to continue the work of the ANPC in the spirit of its founders.

New state legislation relating to threatened and protected plants is being introduced in response to the National Strategy for the Conservation of Australia's Biological Diversity. A summary of the states' initiatives in response to the Strategy appears in this issue. Regional meetings have also been an important conduit for information. The Subtropical Region meeting in May provided an opportunity for members in the area to learn about Queensland and NSW legislation in one session.

Queensland has recently introduced the *Nature Conservation (Protected plants in trade) Conservation Plan 1995*, to fulfil requirements of the *Nature*

Conservation Act 1992. The *NSW Threatened Species Conservation Act 1995* brings consideration of biodiversity conservation forward in the planning process.

ANPC National Office staff recently attended a consultative workshop conducted by NSW NPWS regarding the development of policies and guidelines for propagation and translocation of threatened plants under the legislation. This workshop was conducted by Maria Matthes, who is developing the policies and guidelines, and who is also the Convenor of the ANPC Threatened Plant Translocation Working Group. It was attended by representatives from commercial nurseries, botanic gardens, government departments, the Society for Growing Australian Plants, and farming.

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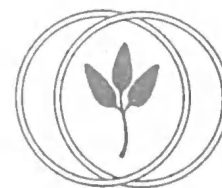
ANPC Advisory Committee

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as part of the rescue program by scientists at the Kings Park & Botanic Garden research laboratory.

A range of leading scientific methods will be used, and include:

- Cryostorage of plant tissue at - 196 deg. C: the long term storage of material representing the widest genetic cross section of threatened species will be developed.

- DNA fingerprinting: Investigations into population genetics using DNA methods are being undertaken to help resolve questions about the genetic diversity of the species.

- Tissue culture: the development of tissue culture protocols for these endangered species may provide a reliable means of propagation for translocation of selected individuals to safe sites.

In the first six months of the project, material has been collected from the majority of study species. This is being used in conjunction with closely related common species to research propagation and genetic structure. The focus to date has been on germination trials to establish the best methods for recombination of a special helper fungus (unique to orchids) and orchid seed in order to facilitate germination. A range of practical and feasible conservation strategies for the study species are expected to eventuate. Once this ground breaking research has been completed some of the methods and strategies may be applied directly to other species also in need of protection.

Alliances between the corporate sector and institutions such as Kings Park & Botanic

Garden are a key way to support research and turn it into conservation action. Western Power is leading the corporate sector in recognising the role industry can play in helping the community to secure our natural heritage.



Purdie's Donkey Orchid (*Diuris purdiei*), one of the two endangered Donkey orchids in the rescue program.



A spectacular Cinnamon Sun Orchid (*Thelymitra dedmaniarum*), being hand pollinated as part of the research to help secure the future of the species.

(continued from page 2)

Regional group development is continuing with the establishment of new groups in Tasmania and the NSW South West Slopes.

The working groups are currently incorporating the feedback received in response to the draft documents, including comments from the Endangered Flora Network of the Australian and New Zealand Environment Conservation Council.

Last but not least, I would like to thank our outgoing volunteer Jeanne Trebeck for her tireless work in processing memberships over the past two and a bit years. Jeanne was a delightful person to work alongside, and will be missed.

Ailsa Rolinson came in as our new volunteer right in the thick of a flood of membership renewals, has survived her trial by fire and is still turning up every week! Welcome Ailsa. [2 JUL 1996]

LIBRARY

A Change of Name for the Olive Pink Flora Reserve

Olive Pink Flora Reserve has now become Olive Pink Botanic Garden.

Clarrie Smith, the Curator, informs us that they have a new telephone number which is (08) 8952 2154.

So the fax number is now (08) 8953 5522.

Their address is still PO Box 8644, Alice Springs NT 0871, and they are on Tuncks Road, Alice Springs.

Thanks Mark!

As mentioned in the Coordinator's report (page 2), those present at the meeting of the Advisory Committee held on 17 June agreed to send a letter of appreciation to the founder of the ANPC, Mark Richards-on. The letter, from the Chair of the Committee, Professor Henry Nix, follows. Professor Nix represents the Association of Societies for Growing Australian Plants (ASGAP). (He is based at the Centre for Resource and Environmental Studies, Australian National University, where he is the Director).

Dear Mark,

The members of the Advisory Committee of the Australian Network for Plant Conservation (ANPC) are unanimous in their desire to record appreciation of your signal contribution. The development of ANPC owes much to your vision, energy and effort during its foundation years. Many excellent initiatives founder in the formative stage because key players cannot muster the resources and effort needed to mobilise the wider community of interest. ANPC has been fortunate indeed to have had your commitment over its first three years.

On behalf of the Advisory Committee I congratulate you on your new appointment as Curator, Desert Wildlife Park and Botanic Gardens in Alice Springs, thank you for your signal contribution to ANPC and extend very best wishes for your future.

Sincerely,
Professor H.A. Nix
Chairman,
Advisory Committee,
ANPC.

PS: Perhaps when you are more settled in Alice Springs we might look forward to a Central Australian Group node in the Australian Network for Plant Conservation.

ANPC Third National Conference - update

The next ANPC conference is planned for mid 1997 on the north coast of NSW or SE Qld. Currently a suitable venue is being sought. An announcement regarding the conference dates will be made once a venue is secured.

Members: Suggestions and Requests

Most universities have seminar series, talks, etc showcasing their research. These may be open to the public/interested people. Contact your nearby tertiary institution(s) for information.

If you have any illustrations, cartoons, photographs and/or slides, your own or those of others, which you think would be useful for *Danthonia*, please contact the National Office. If they are not yours, we would need copyright information or permission before using them.

Reminder

Just a reminder at this point that memberships for 1996 are due.

Grassy Ecosystem Reference Group (Victoria)

This group is fostering a co-operative approach by government and non-government organisations to further grassland conservation in Victoria. It contains a Research Advisory Group which gives grants for grassland research projects. These could cover topics such as management techniques, pest invasion, restoration of communities and habitats, etc. Funds for the grants come from the Australian Nature Conservation Agency.

For more information contact James Ross, Victorian National Parks Association, 101 Parliament Place, East Melbourne Vic 3002.

Phone: (03) 9650 8296.

Australian Grass and Sedge Study Group

This is one of the specialist native plant study groups which have been formed by members of the Society for Growing Australian Plants (SGAP). If you are a member of your local SGAP group, you are eligible to join the above study group. Its aims include conservation and management of grassland areas, and the use of sedges and grasses in landscaping. Membership is \$3 per annum and includes a newsletter. The contact person is Matt Pearson, Australian Grass and Sedge Study Group, PO Box 2089, Normanville SA 5204. Phone: (08) 379 2651.

Declaration of Natural Temperate Grassland as an Endangered Ecological Community in the ACT

Conservation and Wildlife
Section, ACT Parks and
Conservation

Following a recommendation by the ACT Flora and Fauna Committee, Natural Temperate Grassland has been declared an endangered ecological community by the ACT Minister for Environment, Land and Planning, Mr Gary Humphries. This declaration is the first step in protecting this ecological community and was one of a number of declarations including many species dependant on Natural Temperate Grasslands.

The following species have been declared endangered or vulnerable to extinction:

Delma impar - Striped Ledgeless Lizard - Vulnerable.

Pseudophryne corroboree - Corroboree Frog - Vulnerable.

Gentiana baeuerlenii - a sub-alpine herb - Endangered (name under review).

Prasophyllum petilum - a leek orchid - Endangered.

Rutidosia leptorhynchoides - Button Wrinklewort - Endangered.

Swainsona recta - Small Purple-pea - Endangered.

Synemon plana - Golden Sun Moth - Endangered.

Tympanocryptis lineata pingicola - Eastern Lined Earless Dragon - Endangered.

Only about 1000 hectares (5%) of the original Natural Temperate (lowland native) Grasslands in the ACT remain

in more or less natural condition. In addition, about 500 hectares of secondary grassland also occur. These areas are highly fragmented and there has been a marked alteration of the composition and structure due mainly to management practices and invasion by weeds. There are still threats to the remaining areas of grassland. Threatening processes include continuing urban expansion, weed invasion, clearing for agricultural purposes and management activities which do not meet conservation needs.

A Recovery Plan for the ACT Natural Temperate Grasslands is being implemented by ACT Parks and Conservation. This recovery plan will:

- guide a systematic approach to research aimed at determining the distribution and ecological requirements of grassland communities and selected threatened species;
- develop management regimes for grassland sites; and
- establish monitoring programs.

The focus of action for grassland recovery in the ACT is shifting towards research into the long-term management requirements, including weed control, conservation of threatened fauna and flora and the role of grazing stock, burning and mowing. Active community interest in native grasslands is welcomed and community involvement in conservation activities is anticipated.

170 hectares of lowland native grassland have been reserved in the Gungahlin area of Canberra and while this is an important initiative in protecting native grasslands, it

does not incorporate all the associations present in the ACT grasslands.



Electronic Addresses

Kings Park and Botanic Gardens

Their home page address is
<http://www.botany.uwa.edu.au/KP/plantsci.html>

Minerals Council of Australia

minerals@ozemail.com.au.

Environmental Resource and Information Network (ERIN)

http://www.erin.gov.au/life_general_info/biodivser_7/biocon.html

SGAP Canberra Region

New address: it is now at
<http://www.anbg.gov.au/sgap/>

Convention on Biological Diversity

The US Biodiversity Action Network has an Internet list dedicated to the Convention and its effective implementation. If you want to join, send an email to

majordomo@igc.apc.org
with the following message:
SUBSCRIBE BIODIV-CONV
<your e-mail address>

Book Review

Neighbours In Trouble! Endangered Plants and Animals in the ACT. 1996.

Ian Fraser and Margaret McJannett. Illustrated by Helen Fitzgerald. Published by the Conservation Council of the South-East Region and Canberra. Rrp \$20.00.

Robert Boden, Robert Boden & Associates, Canberra.

Neighbours In Trouble! is the fifth book on the natural history of the Australian Capital Territory written by Ian Fraser and Margaret McJannett and their first venture into writing specifically for readers at upper primary and lower secondary school level.

The educational role of the book is increased by numerous questions within the text which could form the basis for classroom or home discussion. The answers are not presented formally but most can be found within the text or deduced from it, although as the authors acknowledge, 'young readers will need help from someone older.'

The book emphasises habitats, specifically grasslands and woodlands which have been most severely reduced in area and species composition by agriculture, grazing, forestry and urban development. Habitats endangered elsewhere but still safe in the ACT are also covered to show how vulnerable they could be to change if conservation managers and the concerned public are not vigilant.

The authors have adopted a broad definition of 'endan-

gered' when discussing species on the basis that the fine distinctions between various categories of vulnerability are somewhat academic in a text designed to stimulate awareness and concern. It has been suggested by one ACT newspaper columnist that this may weaken the term 'endangered' to the point where people become complacent to it.

There are advantages in the consistent use of categories even though their definitions may vary in different state and territory legislation. The term 'threatened' which embraces a range of categories has become widely accepted for plants since introduced by Dr John Leigh and Mr John Briggs in relation to the ROTAP list and is a useful generic word.

Each endangered species covered in **Neighbours In Trouble!** is discussed under a number of questions. What is special about the species? Where is it now surviving? Can we still see it? What does it need to survive? How can we help provide it? Is the ACT an important place for it?

Some species no longer present in the ACT, although still occurring elsewhere, are also covered. This serves to emphasise the extent of changes which have occurred in a relatively small part of the country which has been subjected to accelerated development pressures. It also encourages thoughts on the conservation and social issues of reintroduction of plant and animal species to former habitats.

Plants are outnumbered by animals, but two, the Button Wrinklewort and the Small Purple-pea, are discussed and the authors emphasise the im-

portance of vegetation as animal habitat. Both these species have recently been classified as endangered under the ACT Nature Conservation Act after recommendation by the ACT Flora and Fauna Committee. Conservation Action Plans will now be prepared for these species and a suite of grassland animals listed at the same time.

As the public is encouraged to comment on these draft Plans, it is useful to have the species so well described in **Neighbours In Trouble!**

There are coloured photographs of major ecological communities and delicate and appealing watercolour illustrations by Helen Fitzgerald of individual species, most in their habitat setting. The front cover, featuring a pair of Superb Parrots, will entice many human browsers to pick up the book. The back cover, showing a Peregrine Falcon with a dead Galah, illustrates the ecological realism of species as opposed to individual survival.

The foreword is written by Dr Jill Landsberg, Chair of the ACT Flora and Fauna Committee on which Ian is a co-opted member. While this book is specific to the ACT the design and approach have general application and could be used in books written for specific regions.

Finally, it is important to record that the book was made possible by a Heritage Grant from the ACT Government and the initiative of the Conservation Council of the South-East Region and Canberra in applying for it.

Indian Society for Conservation Biology

The Indian Society for Conservation Biology (ISCB) is an academic body which was recently founded, with its Secretariat at the Tropical Botanic Garden and Research Institute, Thiruvananthapuram, Kerala, India.

Members of the International Advisory Board include: Prof. Gillian Prance, Dr David Given, Prof. John Terborgh, Prof. Paul Ehrlich, Prof. Larry Gilbert, Prof. Michael Soule and Prof. Kai Larsen.

There is a nine member Executive Council, including Dr M P Nayar, ex-Director of the Botanical Survey of India (President); Dr P Pushpangadan, Director of the Tropical Botanic Garden and Research Institute (Vice-President); Prof. K S Manilal, Calicut University; and Shri G Mukundan, ex-Principal Chief Conservator of Forests, Kerala.

The Society's objectives are to promote the conservation of biological diversity of the tropics in general and India in particular, and to undertake activities related to conservation biology. These would include identification of components of biological diversity for conservation and sustainable use, promoting both in situ and ex situ conservation, development of conservation strategies, promotion of research into traditional knowledge, to maintain a database system of rare and endangered species, to evolve guidelines for the management of any protected areas and to disseminate the importance of biodiversity conservation by various means.

The ISCB has a newsletter, Biodiversity India, the editor of which is Dr M Balakrishnan. It aims to be a platform for all conservationists to exchange ideas and pool inputs, and to help educate lay people and policy makers. It contains information on various endangered species.

To contact the newsletter, write to The Secretary, Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram-695 562, Kerala, India.

Phone: (0472) 84236 or 84226; fax: (0091) 471-437230; Gram: TROPGARDEN.



Seminars & Courses

NSW Threatened Species Conservation Act 1995 Introductory Seminar

26th July 1996: Centenary Lecture Theatre, Reserve Rd, St Leonards, NSW. For non-government organisations, community groups, conservation agencies, etc. Fee \$20. Contact Fiona Millhouse, NSW National Parks & Wildlife Service, (02) 585 6879.

Greening Australia Victoria Training & Seminar Program

Sessions

3rd August: Organising a Community Event.

14 August: Protection and Management of Remnant Vegetation.

8 Sept: How to Propagate Local Native Plants.

22 Sept: How to Identify Your Local Plants; **26-27 Oct:** Improving Your Plant Identification Skills - Coastal & Heathland 26th, Grassland & Woodland 27th.

6th Nov: Integrated Weed Management.

3rd Dec: Resourcing Your Revegetation Project.

8 Dec: Sourcing Local Native Seed.

Forum

25th July: Topic - Is There a Role for Indigenous Permaculture?

Seminars

11th July: Grey Water: From Grey to Green.

17th Oct: Fire in Conservation.

19th Nov: Catchment Management.

Bus Tours

18th Sept: Gauging the Effect of Vegetation Corridors.

30th Nov: Creating & Managing Wetlands.

Contact Greening Australia Victoria, PO Box 9868, Melbourne Vic 3000; phone (03) 9421 0900.

See page 22 for more course information.

The Romance of *Haloragodendron* *lucasii* Orch. (2ECi)

Ross Doig, Society for Growing Australian Plants (North Shore Group), Hal. Rediscovery Team

Hal. was once presumed extinct in north suburban Sydney.

Haloragodendron lucasii was first recorded "near Gordon (northern Sydney suburb) in a wild gully" by Arthur Henry Lucas in 1908. Five more specimens were recorded with the National Herbarium up to 1926.

In 1975, after fruitless searches in the intervening years, Dr Tony Orchard, Haloragaceae taxonomist, presumed Hal. extinct.

In 1986, Bruce Deikman of St Ives (near Gordon), identifying plants as part of a botany course project, rediscovered the original population adjacent to his home, sparking a revival of interest which led to two further finds: one plant in North St Ives by John Benson in 1988 and a third population in North Turramurra by Council staff in 1995.

Not a Horticulturist's Dream

Hal. is an attractive plant but certainly not a horticulturist's dream. The following is a brief description:

- A fresh green, soft-wooded, multi-stemmed perennial shrub to 1.8 metres.

- The stems are 4-angled, hairless, new growth on the short branches throughout the year.

- The leaves are opposite, 2

to 2.5 centimetres, channelled and pointed, with toothed margins and a distinct midrib.

- Flowers are white, monocious, terminal and axillary, conspicuously twisted in bud, 4-petalled, 4-styled, blooming from August to December.

Conservation Status

Hal. is listed as 2ECi on the national ROTAP list, (Briggs and Leigh, in press) and as "endangered" in the NSW Threatened Species Conservation Act, 1995.

Habitat

The St Ives population is spread for more than 150 metres along a sandstone terrace below a cliffline, amongst tangled *Gleichenia* spp. (Coral Fern) and *Bauera rubioides* (Dog Rose) and was assumed to contain over two hundred plants.

Species Recovery Plan Recommendations

A Recovery Plan by Nash and Matthes (1994) recommended research into the population genetics and reproductive biology. Enter Marita Sydes (ANU PhD student) to study Hal. and reveal fascinating but disturbing facts.

Research Findings

The original population was not of many plants but only two suckering individuals (clones). The first was 30 square metres in extent and the second was discontinuously spread along 100 metres.

More remarkably, at least one of the plants was estimated to be 400 to 500 years old - a greater longevity than many trees. This is certainly unusual for a soft-wooded perennial shrub in a fire prone area.

But the plot thickens. Marita Sydes anticipated that seed would be available for propagation and ex situ cross-

pollination studies. However, the flowers were found to be male-sterile. She was to speculate rather gloomily that here was a remnant plant from an earlier era bound for extinction in the short term.

Holocene Pollen Studies

As if to confirm her evaluation, information came to us from an honours project in palynology (Tibby, 1993), that pollen core samples from Tuross Lake (South Coast, NSW) contained up to 15% of a *Haloragodendron* species for the period between 5500 and 3000 years BP. John Tibby suggests that at 3000 years BP, a drier period began, causing a population crash within the genus. He noted that the east coast species of Hal. ie. *H. lucasii*, *H. affin. lucasii*, *H. monosperma* and *H. bauerlenii* are all small in population size and geographically restricted.

The Hal. Rediscovery Effort

At this point Marita Sydes made recommendations for the need to discover new populations for the purposes of increasing the genetic diversity and finding male-fertile material.

NSW National Parks and Wildlife Service implemented a search program under the guidance of Senior Research Scientist Dr Tony Auld, aptly named the "Hal. Rediscovery Effort". This program drew upon the resources of National Parks field officers, volunteer bush regeneration groups, bushwalking clubs and the Society for Growing Australian Plants (SGAP).

New Hal. Population Found

By late 1995, this initiative led to the exciting discovery by Alan Hall, Christine Mitchell and Colin Green of a further

population within the southern boundary of Ku-ring-gai Chase National Park, Sydney. Unfortunately the flowers again proved to be male-sterile and there is also a high possibility that the population is a single genetic individual.

The current situation is that we have 4 populations of possibly 5 individuals, unable to reproduce from seed. Ex situ specimens are held by Mt Annan Botanic Gardens, the Australian National Botanic Gardens and members of two SGAP groups.

Hal. is a plant more endangered than the greatly publicised *Wollemia nobilis* (Wollemi Pine), and the Hal. Rediscovery Team awaits August with anticipation, when the flowering period begins and the search for fertile Hal. continues.

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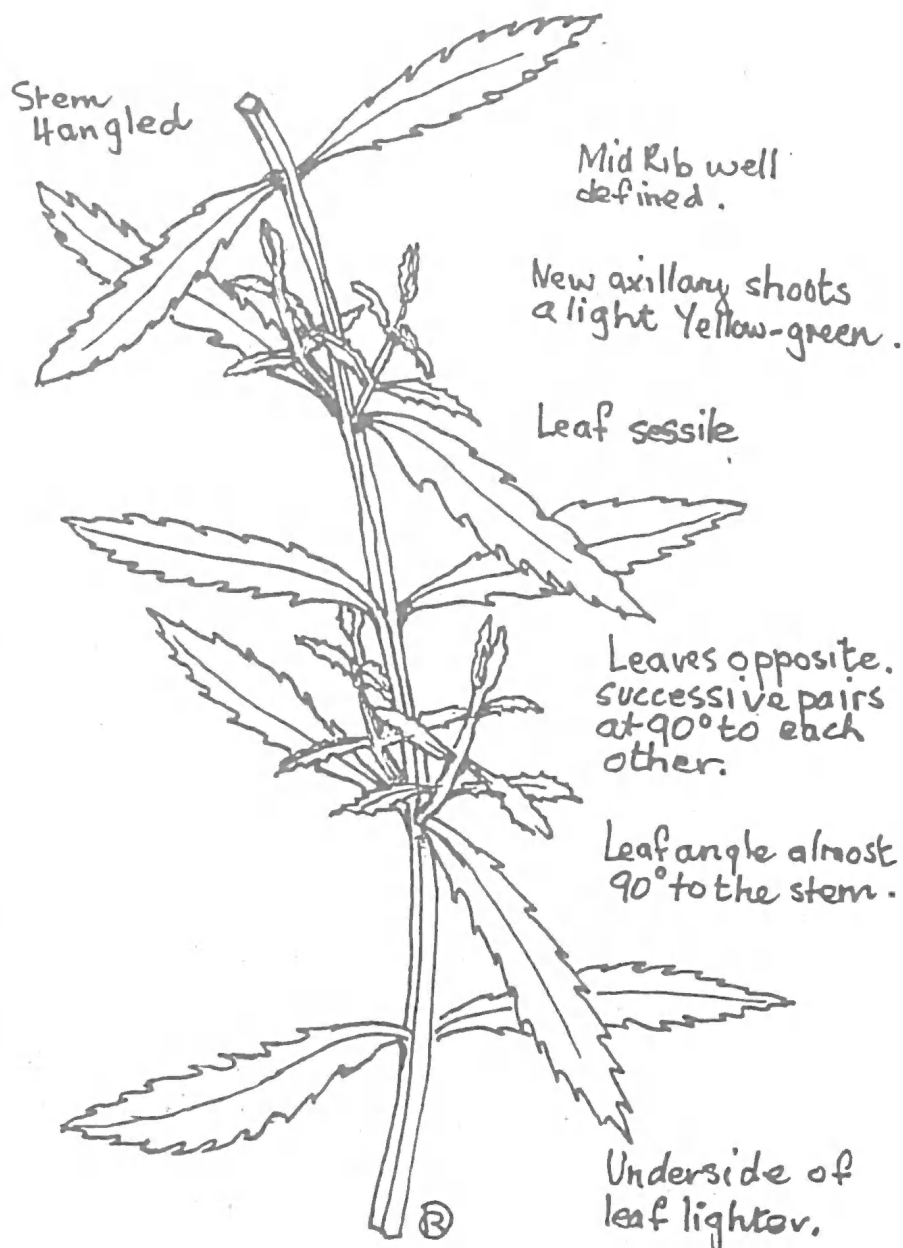
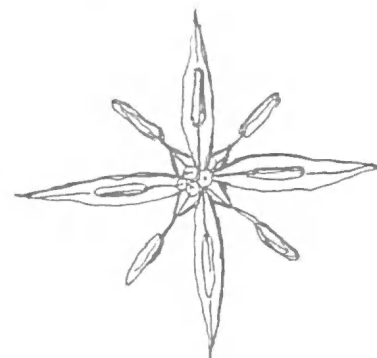
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Tibby J. 1993. Palaeoecology and Plant Conservation - an example from the shrub genus *Haloragodendron* Orch. Insti-

tute of Australian Geographers Conf. Procs. Monash Publications in Geography No. 45, Monash University, Melbourne.

Williams M.J. and Doig R. 1996. *Haloragodendron lucasii* Rediscovery Effort - community involvement in threatened plant management. unpubl. procs. Sydney Volunteer Coordinators Network (Natural Areas), Bi-monthly Meeting, Garigal National Park, Sydney.

The drawings below are of *Haloragodendron lucasii* and were by Ross Doig.



National Blueprint for Biodiversity Protection Now in Place

Andreas Glanznig, National Coordinator, Community Biodiversity Network

The continuing decline of many globally important ecosystems and plant and animal species has made the adoption of the National Strategy for the Conservation of Australia's Biological Diversity by the Commonwealth and all State and Territory governments in February this year a timely and major step towards securing an ecologically sustainable future.

The Strategy was first mooted in 1989. The seven years to adoption has ensured it reflects extensive consultations and has wide and strong community support. It includes a range of targets which when fully implemented will build the safety net for Australia's web of life. One is that by the year 2000 Australia will have:

- built a nationwide system of protected areas on public land and waters which represent the major ecosystems in each biogeographic region
- stopped and reversed the decline of remnant native vegetation
- avoided or limited any further broadscale land clearing in those instances in which regional biodiversity conservation aims are compromised, and
- implemented effective controls for at least 1 introduced mammal species and at least 3 major introduced plant species.

Governments have agreed

to implement the Strategy urgently. A test of this commitment will be whether new and additional investments are made over the next five years to make this safety net an on-ground reality. On this point, the conclusions of an authoritative CSIRO-led study titled 'Reimbursing the Future' are poignant:

"As Australia is still losing biodiversity, it is clear that as a nation we have been under-investing in biodiversity conservation and over-investing in activities that threaten biodiversity. Without further investment in biodiversity conservation, the long-term consequences - both economic and ecological - may be disastrous" (p.153).

At the Commonwealth level, peak conservation groups have been advocating the strengthening of key programs to ensure that major planks of the biodiversity safety net are effectively implemented. These include the National Biodiversity Conservation Program, the National Reserves System Cooperative Program, and the Endangered Species and Save the Bush programs.

The additional investment needed to build the safety net will cost in the order of \$35 per person for each of the five years until the Sydney 2000 Green Olympics. In other words, one of the most priceless gifts the people of Australia can give their grandchildren and the Earth will only cost an extra 10 cents a day per person; about three movie tickets a year. This figure is derived from the recent study on the cost of protected area acquisition in NSW, the HORSCERA (House of Repre-

sentatives Standing Committee on the Environment, Recreation and the Arts) inquiry into the role of protected areas in biodiversity conservation and funding estimates to strengthen the Endangered Species Program.

The challenge ahead can be illustrated by the agreed target to build a representative system of protected areas by the year 2000. At present, more than half of all major terrestrial biogeographic regions are not represented or are poorly represented in a national park or nature reserve. Ecosystems ranging from lowland temperate grasslands and woodlands through coastal heathlands to an array of arid communities have been identified as needing urgent protection. A similar situation exists for marine ecosystems.

The need to meet this target is vital when the substantial risk of losing more biologically important ecosystems in the coastal zone is considered. For example, more than 60 per cent of Queensland's rare, threatened or endangered plants are found in the south-eastern urban growth areas, but a study led by Carla Catterall of Griffith University has shown that if current trends continue all the bushland cover of coastal south-east Queensland will be cleared in the next 25 years. This situation is reflected in many other urban and non-metropolitan growth areas around Australia.

The implementation of the National Strategy presents governments, industry and communities with a major opportunity to build the safety net for Australia's rich diversity. The public will for action is strong, evidenced by

the rise of Dunecare, Coastcare, Parkcare, Landcare, local conservation and bush regenerator groups. Community involvement is central to the success of the Strategy and this depends on convincing all Australians of the value of Australia's living gold - our biodiversity - by the time our elite athletes go for gold at the Sydney 2000 Green Olympics.

Free copies of the National Biodiversity Conservation Strategy can be obtained by ringing the Community Information Unit within the Department of Environment, Sport and Territories:

1 800 803 772.

Threatened Species Legislation Information

Summarised from the second Australian Biodiversity Bulletin of the Community Biodiversity Network (CBN).

Action 7.3.1 of the National Strategy for the Conservation of Australia's Biological Diversity commits State and Territory governments to develop complementary biodiversity strategies. Their progress is summarised below.

Victoria

The Victorian Government developed a draft "Flora and Fauna Guarantee Strategy: Conservation of Victoria's Biodiversity", released for public comment in January 1993. The legislative basis for its development is in the *Flora and Fauna Guarantee Act 1992*, and it has been revised to reflect submissions and extensive consultations as well as the National Strategy, but is

not yet finalised.

New South Wales

The legislative basis for the preparation and implementation of the NSW Biodiversity Strategy is set out in the *NSW Threatened Species Conservation Act 1995* (in effect 1st January 1996). A NSW Biological Diversity Advisory Council (BDAC) has been established, with representatives from industry, science and conservation, an Aboriginal Land Council and local government. The Council provides advice to the Minister for the Environment and to the NSW National Parks & Wildlife Service (NPWS) on the development of the Strategy and the public consultation process. It also advises on biodiversity conservation matters.

The Strategy is being prepared by the NPWS with the BDAC and other government agencies. It is expected that an exposure draft will be released for public consultation in mid-1996.

Information Circular No 1 about the Act is available from the NPWS. It goes through the sections of the Act, and includes appendices dealing with questions and answers, a Department of Urban affairs and Planning circular, and the Act's schedules with lists of endangered and vulnerable species, populations and ecological communities.

Queensland

The Queensland Government has a range of initiatives. These include: implementation of the *Nature Conservation Act 1994*, development of policies to manage tree clearing, integration of biodiversity objectives into Landcare and

integrated catchment management programs, development of bioregional conservation strategies, and the conduct of comprehensive regional assessments of forest bioregions. New planning and resource management legislation is being developed, and other resource and development legislation has been reviewed and amended as necessary.

South Australia

The SA Government is working to implement elements of the National Strategy. These include strategic planning to incorporate biodiversity conservation into the government functions relating to primary industry, road transport, environment and natural resources, and regional development plans.

Tasmania

The Tasmanian Government is implementing actions including review and enactment of legislation to provide a legal framework for implementing biodiversity conservation. Legislation being reviewed includes the *Threatened Species Protection Act 1995* (which includes Schedules 3-5, listing endangered, vulnerable or rare taxa of flora and fauna), *Resource Management Planning Tribunal Act 1993* and the *Land Use Planning and Approval Act 1993*.

Western Australia

The Department of Conservation and Land Management is developing a Nature Conservation Strategy - a draft was released in early 1992 for public comment. This outlines the broad thrust and some of the detailed approaches to conserving biodiversity in the State. Meanwhile, existing

legislation and policies provide a framework for current efforts which include: landcare and environment protection, recovery planning for threatened species and ecological communities and its application within and across regions of the State, and management of threatening processes.

Australian Capital Territory

To satisfy statutory requirements under the *Nature Conservation Act 1980* (amended in 1994) the ACT Parks and Conservation Service is developing the ACT Nature Conservation Strategy. The Service intends to launch the draft Strategy for an approximately 3 month public comment phase in late 1996, with the finalised Strategy expected to be released in the first half of 1997.

Northern Territory

The Parks and Wildlife Commission of the NT takes an issue by issue approach. Three major policies being prepared are the the Threatened Species Strategy, the Parks Masterplan, and a Strategy for Conservation through Sustainable Use of Wildlife. There is a need to protect representative samples of the Territory's key biogeographic regions. The Threatened Species Strategy aims to protect threatened species and ecological communities, and to minimise the endangering of additional communities and species. The release of the draft Strategy is expected in mid 1996.

(To receive an electronic copy, send your contact details including email and fax to the CBN, PO Box 302, Avalon, NSW, 2107.

Email: bdnet@peg.apc.org;
Fax: 02 99732402).

Network of Regional Botanic Gardens: Tropical & Subtropical Zone

Report on the conference held at Twin Waters Resort, Maroochydore Qld, March 15-17 1996

Ben Wallace, Director, Living Collections, Australian National Botanic Gardens, Canberra

About 60 people attended, representing 23 regional botanic gardens already established, planned or under development.

An excursion to Brisbane on Saturday morning to see the Brisbane Botanic Gardens at Mt Coot-tha (thanks Ross McKinnon and staff), and the collections and functions of the Queensland Herbarium (generously shown and interpreted by Dr Gordon Guymer and staff) was informative and enjoyable.

A tour on Sunday morning of Fairhill Native Nursery and Botanic Garden, Yandina, was particularly interesting and instructive. The nursery, privately owned and funded, runs a visitor centre, with education facilities including interpreted trails, a restaurant and art gallery, native plant sales and a shop. It also carries out significant horticultural research and is altogether a very encouraging example of a successful enterprise combining horticulture and conservation of native plants.

The conference ended with a walk through Buderim Rainforest Park.

The conference keynote speaker, Ross McKinnon, who

is Curator of the Brisbane Botanic Gardens, gave a stimulating and entertaining talk on the topic 'Regional Botanic Gardens - a difficult birth but a will to survive'. Points which he emphasised about regional botanic gardens included:

- the importance of comprehensive planning based on a full site analysis. Botanic gardens take a long time to develop and must use resources carefully to achieve their goals
- an emphasis on communication and passive recreation
- they should display and research local flora
- they should preserve rare and endemic species
- they should fully record the collection and label individual plants.

Under the topic of 'The Network in Context', I talked about the strengths and values of networking on a regional basis. Salient points follow:

- Needs and resources are often common. Themes such as climate, flora, vegetation and biogeography can be co-operatively developed and can give access to such resource opportunities as the "tourist dollar".

- Biodiversity conservation is most effective on a regional basis because the flora, particularly rare and threatened (R/T) taxa and communities, are likely to be known by local people who are also in the best position to monitor their status and to conduct recovery operations.

- The ANPC is organised on a regional basis, reinforcing the above point. The objectives and functions of ANPC were broached.

- Landcare operations, in which regional gardens can

appropriately co-operate, are organised on a regional basis.

- Involvement of indigenous people in providing visitor services, and in developing a collection, interpretation and education thematic structure in a botanic garden, is very appropriate. They have a fundamental attachment to the land, and quite often a great depth of knowledge of the regional environment. Issues relating to their attainment of social justice and reconciliation are also relevant, including, for example, employment, income access and interaction with the community.

- The availability of funds from Australian Nature Conservation Agency (ANCA) conservation programs was raised, including advice about applications meeting program objectives and the availability of the 'Goldguide'.

President of the Society for Growing Australian Plants (Qld), Lorna Murray, talked about the aims and running of SGAP, and especially aspects relevant to regional botanic gardens. Important points she raised were:

- the potential role of regional gardens in raising the awareness of the public about the regional flora including particularly their horticultural values

- the preservation of local R/T species in regional gardens

- the potential role for the SGAP to work with regional gardens in recovery plans for local R/T species

- nature conservation legislation and present problems mitigating against R/T species conservation 'best practice'

- the potential for the con-

servation of Australian flora through cultivation.

David Hockings gave an expert rendition on 'Establishing a Nursery in a Regional Botanic Garden', discussing such topics as the 'uniqueness of the regional situation' in Australia, nursery practice, and research into difficulties (eg smoke germination advances achieved in Kings Park) and into the horticultural potential of native species.

'Interpretation of the Collection': Lucy Sutherland, Manager (Public Contact), Brisbane Forest Park, gave an informative presentation on the importance of interpretation for education, information and enjoyment.

Other topics included 'Operation of a Network' (Ian Morris, Interlink Technology) and 'Strategic Management Planning' (Gary Garner, Agribusiness Consultant).

Progress reports were given by the following Botanic Gardens: Barcaldine Aridland, Gallop in Cooktown, Flecker in Cairns, Townsville's Queens Gardens, Anderson Park, and the Palmetum, Tweed Shire (proposal), Gladstone Tondoon, Lismore Rainforest, Emerald, and the Australian National Botanic Gardens, Canberra.

Interesting developments included:

- Work at Barcaldine on setting up and interpretation of theme areas eg Gidgee Gilgai, and the Lloyd Jones Weir and Clydesdale Farm - aboriginal culture/bush tucker (the last two with ATSIC funding).

- Townsville Gardens nursery is now commercial, with the assistance of Foxtail palm production.

- Gladstone Tondoon: 50%

of Port Curtis flora is now represented in the collection, with recent plantings of R/T species.

- Lismore: a new site of 180 hectares has been identified (about 4 km east of the previous one), with excellent red soil, creeks and remnant rainforest. Basic themes will be conservation, rehabilitation and re-establishment of the 'Big Scrub'.

- Emerald: planning and establishment of themes on plants and communities of the regions such as the Qld Central Highlands, Leichhardt Region, and Carnarvon Gorge.

The Network has been very successful in stimulating the ongoing development and establishment of many new regional gardens. The economic rationality of such development is borne out by, for example the success of the Gladstone Tondoon Botanic Gardens, now the region's most popular destination only a few years after establishment. The burgeoning industry of ecotourism is constantly in need of new appropriate destinations, a niche role which is ideally performed by well-put-together regional botanic gardens. At the same time the understanding, appreciation, conservation and horticultural development of the flora and vegetation of the total region covered is being promoted.

Respect, interactive stimulation and support between the kindred institutions have been and will continue to be key elements in the Network's success, and the conference was a good example of this.

Publications of Interest

Wildlife Corridors and Conservation Biodiversity: A Review. 1995. Anne-Marie Wilson and David B Lindenmayer. Centre for Resource and Environmental Studies (CRES), Australian National University. Canberra: CRES, Australian National University.

This report was prepared for the National Corridors of Green Program, Greening Australia Ltd. and was supported by the One Billion Trees Program administered by the Australian Nature Conservation Agency (ANCA). The report was compiled from an extensive body of literature examining the value of wildlife corridors for the conservation of biodiversity. It makes recommendations to the National Corridors of Green Program, covering Total Landscape Management, policy issues, design principles for the development of corridors and upgrading the knowledge base.

Appendix 1 has a tabular summary of international research on wildlife movement and behaviour in fragmented landscapes, including 37 Australian papers.

Conservation Assessment and Identification of the Gaps in Protected Areas in the Mitchell Grasslands, Particularly in the Northern Territory: Year Two Report. 1996. Alaric Fisher. Palmerston, NT: Parks & Wildlife Commission of the Northern Territory.

Distribution and Ecological Significance of On-Farm Bush Remnants in the Southern Wheatbelt Region of Western Australia. 1995. E A Griffin. Perth: Western Australian Department of Agriculture.

The Biology and Management of the Pigmy Cypress Pine (*Callitris oblonga*) in NSW. 1993. Christopher Nadolny and John Benson. Hurstville: NSW National Parks & Wildlife Service.

The Biology and Management of the Dwarf Mountain Pine (*Microstrobos fitzgeraldii*) in NSW. 1993. Wyn Jones. Hurstville: NSW National Parks & Wildlife Service.

Proceedings of the 1994 National Workshop on Native Seed Biology for Revegetation. 1994. Australian Centre for Minesite Rehabilitation Research (ACMRR). Kenmore, Qld: ACMRR.

Managing Habitats for Conservation. Ed. William J Sutherland and David A Hill. 1995. Cambridge: Cambridge University Press. This book gives a pragmatic, habitat by habitat guide to conservation management. For each habitat, there are options and solutions, possible problems and examples of good and bad management from the past.

An Interim Biogeographic Regionalisation for Australia: A framework for establishing the national system of reserves. R Thackway and I D Cresswell (Eds). 1995. Version 4.0. Australian Nature Conservation Agency, Canberra. Available on the

Internet at:

http://www.ERIN.GOV.AU/LANDS/REGIONS/IBRA/_SPATIAL/IBRA.html

Development of a Methodology for Identifying Declining Species from Existing Data. 1996. Michael A McCarthy and Mark A Burgmann. Canberra: Australian Nature Conservation Agency (ANCA).

Save the Bush publications

Friends of Galarangi - the Carlingford Botanic Parkland: Final Report. 1994. Friends of Galarangi - the Carlingford Botanic Parkland Inc. Carlingford: self-published.

Inman Valley Native Vegetation Retention Project Report. 1995. Mary Crawford. Yankalilla, South Australia: Inman Valley Torrens Vale Landcare Group.

An Environmental Weed Survey of the Australian Capital Territory. 1995. Sandy Berry and Michael Mulvaney.

A Vegetation Survey of Disused Railways Corridors in the Mid-North Region of South Australia. 1994. Michael K Hyde. Adelaide: Nature Conservation Society of South Australia.

Caring for Your Local Reserve: a Workbook for Friends of Reserves. 1992. Prepared by Helen Hocking and Melva Truchanas. Tasmania.

Genaren Hill Landcare Project: Final Report. 1994. Michael Sutherland. Genaren Hill Landcare Group.

"Back from the Brink ... Refining the Threatened Species Recovery Process"

*Sally Stephens, Endangered
Species Unit, Australian Nature
Conservation Agency*

The "Back from the Brink ... Refining the Threatened Species Recovery Process" Conference was held at the old Quarantine Station on North Head in Sydney, from 12-14 December 1995. A total of 95 people from all sections of the community involved in the recovery process participated. They came from non-government organisations, government agencies, research institutions, conservation and industry groups, and local community and landholder groups.

The conference consisted of five main sections:

- Keynote address: Tim Clark from Yale University, USA, on how to objectively analyse the effectiveness of the recovery process.

- Overview talks: State and Commonwealth legislative and administrative frameworks for recovery, developing priorities for conservation (Action Plans, Conservation Overviews, Recovery Plans, vascular plant priorities), the essential elements of a good Recovery Plan, incorporating science into Recovery Plans, involving landholders in recovery decisions and action.

- Case studies: experiences of recovery in action from Australia and New Zealand: problems encountered, lessons learned.

- Workshops: there were

four which each ran twice with different participants: 1) Recovery Plan Implementation, 2) Community Involvement, 3) Monitoring and Evaluation of Recovery Plan Implementation and 4) Recovery Planning for Ecological Communities, for Groups of Species and for Regions.

- Summation: Presentation of the outcomes and recommendations from the workshops, and Tim Clark's overall summation of the conference.

There was a strong feeling that the conference, its theme, timing, and the issues addressed were very relevant, and that it provided an excellent opportunity for practitioners to develop effective networks. All the subsequent feedback received has been very enthusiastic. Several participants have made a point of writing to the Endangered Species Unit (ESU) thanking us for a rewarding and productive conference.

Many of the recommendations will assist the setting up and operation of Recovery Teams, particularly with the involvement of local communities in recovery. This is an area which has needed greater commitment in the past, but which is essential for conservation across the landscape to be effective. The necessity and the benefits of involving local people were widely recognised by the conference participants.

The papers presented at the conference will be published, hopefully by the end of the year. In addition, the outcomes of the conference will be compiled into a manual for recovery planning practitioners. This will incorporate primarily the ESU Recovery

Planning Guidelines (with amendments as appropriate), and relevant elements of the conference workshops.



Interesting Talk

Flora of Kangaroo Island and the Eyre Peninsula

8th August 1996: Canberra, ACT.

This talk will be given by Barrie Hadlow, from the Australian National Botanic Gardens nursery, at the August meeting of the Society for Growing Australian Plants Canberra Region (Inc.).

The meeting starts at 8pm, at the Hughes Community Centre, Hughes Shopping Centre, Wisdom St, Hughes ACT.

Contact: The Secretary, Sue Graham, SGAP Canberra Region (Inc.), PO Box 217, Civic Square ACT 2608.

OR ring the Public Contact Officer, John Carter (06) 231 7055.

Conferences

Bushfoods on the Tweed

16-17th August 1996: At Murwillumbah Civic Centre, Murwillumbah, NSW. It covers the use of bush foods, and information for existing and prospective growers. Bush food will be served. Contact Sharon Costin: telephone on (066) 79 3353; fax (066) 79 3143.

World Heritage Tropical Forests: Science for Better Management

2-6 September 1996: Cairns, North Queensland. The aim is to present current scientific research on tropical forests, provide an interface among stakeholders to discuss World Heritage tropical forest protection, presentation and management, and to identify priorities for future research and management.

Speakers include Prof. Michael Archer and Dr Norman Myers, a leading world adviser on forests and tropical deforestation. Contact: Conference Secretariat, Intermedia Convention and Event Management P/L, PO Box 1280, Milton Qld 4064 Australia. Phone (07) 3369 0477, International +617 3369 0477.

Fax (07) 3369 1512, International +617 3369 1512; Email whtf96@sunray.im.com.au

Australian Rangeland Society Conference

24-27 September 1996: Port Augusta, South Australia. Please contact the committee chair, Carolyn Ireland, Dept of Environmental Science & Rangeland Management, University of Adelaide, South Australia.

Phone & fax (08) 370 9207.

Palm & Cycad Symposium

11-13 October 1996: The Palmetum, Douglas, & the Brothers Leagues Club, Thuringowa, Townsville, Qld. The North Queensland Palm Society, the Friends of the Palmetum and the Palm & Cycad Societies of Australia. There will be lectures by international specialists including David Jones on *Macrozamia*, Don Hodel, USA, on *Chamaedorea*, and John Dowe on *Linospadix*, tours of the Palmetum & various gardens and the annual Palmetum Plant Sale. Contact: The Secretary, Friends of the Palmetum, PO Box 1729 Aitkenvale Queensland 4812 Australia. Phone (077) 22 0455; fax (077) 25 3290.

Second National Workshop on Native Seed Biology for Revegetation

11-12 October 1996: Newcastle, NSW. Australian Centre for Minesite Rehabilitation Research conference. This aims to present the latest research, review the current state of knowledge, identify

research and technology transfer needs in native seed biology, and determine future market service needs in the use of native plant seeds. The focus is on provenance, seed testing and storage, soil seed banks, and germination and storage. It will provide a forum for groups involved in mining, landcare, conservation, government and research.

Contact: (07) 3212 4555; fax (07) 3212 4574; Email C.Bell@mailbox.uq.edu.au.

3rd International & 21st Annual Minerals Council of Australia Environmental Workshop

14-18 October 1996: Newcastle, NSW. Objectives are to foster technical exchange between environment professionals involved in the worldwide minerals industry, to discuss relevant environmental management issues for developing countries, and to demonstrate environmental management skills and technology for the minerals industry worldwide. It will include sessions, site visits, poster presentations, a trade exhibition, pre- and post-workshop tours and a social program. Contact: Ms Moya Vanags-Lang, Minerals Council of Australia.

Phone (06) 279 3600, Int. +61 6 279 3600.

Fax (06) 279 3699, Int. +61 6 279 369.

Email:

minerals@ozemail.com.au. Please include all postal details with requests.

Tasmanian Regional Group Report

Andrew Smith, Community Education and Training, Royal Tasmanian Botanical Gardens

Jeanette Mill from ANPC visited the Royal Tasmanian Botanical Gardens (RTBG) on 6th June to host a meeting of interested parties to set up a regional ANPC group in Tasmania. While the need to have an effective network in Tasmania was recognised, there were also many difficulties raised and discussed. It was recognised that although a wealth of information is available and ought to be provided to community groups, councils and so on, it was hard to get that information to the right people at the right time.

The next meeting was held on July 4th at 12.30 at the Royal Tasmanian Botanical Gardens. There will be a report in the next issue. It is hoped that the subsequent meeting will be conducted in another region of the State.

Contact Andrew Smith at the RTBG for details: phone (002) 34 6191.

Report from South Australia

Compiled from *The Networker*, newsletter of South Australia's Threatened Species Network, with permission from Rick Davies, Threatened Plants Action Group

The Threatened Plants Action Group (TPAG) has been carrying out a variety of projects, usually in the form of working bees at particular sites. These include:

- Over 18 months, work controlling weeds in the Belair National Park, often with members of the Native Orchid Society of South Australia - Conservation Group. The work is part of an attempt to conserve *Pterostylis cucullata*, a nationally vulnerable orchid. Weeds include roses and sweet pittosporum, and their numbers have been noticeably reduced. Other native species will benefit also.

- A survey for *Acacia retinocarpa* at Ferries Macdonald CP in February.

- Monitoring for *Senecio megaglossus* at Dutchman's Stern CP, December 1995.

- Weed clearing along creek lines at Millbrook Reservoir to help conserve *Caladenia rigida* (the Rigid White Spider Orchid), December 1995.

- Visit to see *Psoralea parva* (Small Scurf Pea) at Hope Valley Reservoir, November 1995.

- A survey of the endangered *Acacia enterocarpa* (Jumping Jack Wattle) at Aberdour Park, September 1995.

Coming working bees include:

6-10 July 1996 - Bridal creeper control and surveying for *Pterostylis arenicola* in the Coorong National Park.

Contact: Birgitte Sorenson: (08) 336 3755 or (08) 258 8051.

3-4 August 1996 - Bridal creeper control at Finniss to protect *Acacia pinguifolia*. Contact Vicki-Jo Russell for more details on (08) 223 5155.

Stirling District Members

Seven people in Stirling work on locally endangered plant populations. They have a very careful and systematic approach to the field and recording work, with photo-points at each site, and follow up on subsequent visits. Some species targeted include *Drosera praefolia*, *Euphrasia collina* ssp *osbornii* and *Derwentia derwentiana* ssp *homoladonta*.

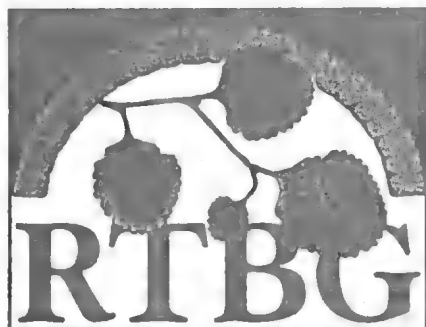
Reports are lodged with the Department of Environment and Natural Resources and with the Threatened Species Network State Coordinator.

Sessions are held monthly on Tuesdays. Contact Yvonne Steed on (08) 339 3081.

Other Groups

Threatened Plants of Kangaroo Island. Contact Bev Overton on (0848) 22 374.

Adelaide Plains Flora Association. Contact Karen Possingham on (08) 364 0671.



ROYAL
TASMANIAN
BOTANICAL
GARDENS

Subtropical Region

Report of the Meeting held
Saturday 25th May, Tweed
Heads Civic Centre

Louise Cusack, Tweed Shire
Council, and Bonni Reichelt
(Genesearch) with the assistance
of Gordon Guymer, Kate Piper,
Andrew Stead and Jeanette Mill

The meeting was attended
by 17 people, with apologies from several members from the region.

The first speaker was Dr Gordon Guymer, Chief Botanist at the Queensland Herbarium, who talked about the *Qld Nature Conservation Act 1992 and Regulations 1994* as they relate to plant species. The object of the Act is to conserve nature, and specifically to ensure viable populations of all taxa in the wild. Priority is given to the conservation and management of wild populations of rare and threatened species. These aims are to be achieved by: protection of Rare and Threatened (R&T) species from clearing, controlled harvesting of protected plants, encouraging propagation, discouraging removal of whole plants, stopping illegal trade and ensuring that representative populations remain in the wild.

Dr Guymer described the different classifications and the estimated number of species in each category. In summary, regulations regarding taking and use of wild plants for commercial purposes in the Restricted category include:

- taking of a R&T plant from the wild must be licenced;
- R&T plants must be

tagged;

- R&T plants may be propagated in cultivation as authorised by the Department of Environment (QDE) issuing a propagator's tag;

- wild-taken plants must bear official tags.

However, growers from a recognised recreational plant society may propagate a R&T plant without tags, licence or record keeping if they are not selling them. No movement advice is needed to take the plant to meetings or shows or if changing address. The legislation does allow the harvesting under licence of some protected plants or plant parts in the wild with limits set by a harvesting committee.

It was interesting to note that if a rare plant is found on a property, the government does have the power to stop any property holder (even councils) from development.

The next areas to be addressed by the legislation are the protection of plant communities (Wallum, etc), vegetation mapping programs, unknown species and changing classifications.

The next speaker was Andrew Stead, the Threatened Species Officer from the Threatened Species Unit of the NSW National Parks and Wildlife Service (Northern Zone), who talked about the *NSW Threatened Species Act 1995*. This Act replaces the *Endangered Fauna Act* and extends the legislation to cover plants.

Objectives of the Act are to conserve biodiversity and promote ecologically sustainable development, prevent extinction and promote recovery, protect critical habitats, eliminate and manage threatening

processes, properly assess potential impacts and encourage cooperative management. The Act includes: listing of species in schedules, critical habitat, recovery plans, threat abatement plans, stopwork orders and biological diversity strategy.

Andrew gave definitions of "endangered populations", "ecological community", "key threatening processes", "critical habitats" and "recovery plan". It was interesting to note that for recovery plans, voluntary cooperation of all stakeholders was required. Priorities for recovery plans are set on the degree of risk of extinction of the endangered species, the ability of that species to recover, whether the species at risk is critical for the survival of other species and whether relative abundance is a measure of the overall health of the ecosystem. The plans must also look at critical habitat and threatening processes, social and economic consequences, critical habitat protection, what recovery actions are necessary, measures of success, responsible authorities or persons and date of review.

Andrew also spoke about Protected Plants, Threatened Plants and Translocation Guidelines for Recovery Plans. There was an interesting example of *Acronychia littoralis* at Chinderah, where the plants propagated and translocated turned out to be sterile.

A field trip was led by Kate Piper from the Fingal Head Dune Care and Reafforestation Group. She took the group to Fingal, with the first stop being a wetland revegetation site. Strong red flushes of *Calistemon* growth and *Allocasuarina* are now visible on the ex-

changed landsite acquired from the Department of Main Roads (DMR) who resumed wetland to build the bypass around Chinderah. The DMR funded the project with the Fingal Head Dune Care and Reafforestation Group carrying out the planting.

Next was a visit to their nursery with propagating and bench space facilities. Seed is collected locally and plants grown here supply other dune care projects in the Tweed Shire.

The walk to Fingal Beach is a tribute to the Group's hard work over the last 10 years. Kate explained that a slasher was used to initially retard Bitou Bush. Diverse species now shelter passers by from the on-shore winds: the air is filled with bird songs and creatures rustle away under shrubbery as you pass by. The beach was a sight to see after the heavy storms experienced at the beginning of May. A drop of about two metres divided the high tide from the planted dune area. How great would the loss of sand be without the plant-stabilised dunes?

Items discussed at the meeting also included the need for a new coordinator for the group and an invitation for ideas for the 1997 National Conference.

Next Meeting:

When: 17-18 August 1996.

Where: Myall Park Botanic Garden, Glenmorgan, Qld.

Nita Lester, the organiser, says: "Myall Park Botanic Garden - once a privately owned garden, now owned by a non-profit company of which all directors are honorary. During your visit you will be able to tour the 70 hectares of plant-

ings under the leadership of our experienced guides. Stay overnight and enjoy late afternoon and early viewing of the water birds on the lake. The art gallery houses the exquisite collection of botanical watercolours. For the artist and photographer in you, your senses will be overwhelmed. Plan a weekend to remember ... "

This Garden holds one of Australia's oldest collections of native flora, and a herbarium and an art gallery. The creator is David Gordon, who started it in the 1940s and also bred the famous *Grevillea* hybrids, named after his daughters Robyn, Sandra and Merinda.

Accommodation: There is some basic accommodation available.

Contact (076) 656 734 or (076) 656 798. There is also a motel in Glenmorgan, the Bottle Tree Inn, and enquire about farm stays.

Contact: Nita Lester on phone: (076) 656 754.

Fax: (076) 656 787.

More information will be available in the invitations.

Members' Activities

World Environment Day: Sandra and Gwyn Griffiths, members from Maleny, held a display for the Network at Maroochydhore on the Sunshine Coast. Sandra was the convenor of the World Environment Day Festival held there on Sunday June 9th, and had a tent for the Community Biodiversity Network. The ANPC display was housed there.

Thanks to them for spreading the message about the Network.

SE NSW and ACT Regional Group

**Report of the meeting held
18 May 1996, Wagga Wagga
Campus, Charles Sturt
University**

*Kathryn Maxwell and John
Wilkes*

Twenty three people attended this meeting. It was convened by Roger Good, of NSW NPWS, who has had a close association with the South West slopes and Riverina region.

Roger emphasised that the conservation issues faced by the area are different enough from those encountered in the SE NSW and ACT Region to warrant setting up a new regional group which could encompass not only the SW Slopes and Riverina but also might extend as far as Benalla in Victoria. The aim of holding the meeting in Wagga Wagga was to obtain the agreement of local groups interested in plant conservation and of conservationists from the area to set up a new regional group of ANPC.

The National Coordinator of the ANPC, Jeanette Mill, spoke about its background, development and objectives and went on to list some of the projects sponsored by the ANPC.

Dr Geoff Burrows, who is a lecturer in horticulture at the Wagga Wagga Campus of Charles Sturt University, then described how his interest in the flora of the region had developed over the previous 10 years to the extent that he had surveyed 25 sites to produce a

multisite species list comprising nearly 4000 site species records, including several threatened species. Geoff explained that only 7000 ha (0.2%) of the SW slopes is reserved and of this, 4000 ha is in one reserve. The reserved areas include two State Recreation Areas and five nature reserves but no National Parks. The three dominant vegetation types are Eucalypt/Black Cypress, White Cypress and River Red Gum. Of the 620 species studied, 100 were previously unrecorded in the region.

Geoff spoke of the benefits of the research, such as providing more comprehensive national and Sydney collections, the obvious need for The Rock and Yolandra Nature Reserves to be converted to nature conservation reserves, the use of the data by groups such as Landcare to select plants for revegetation and the production of a field guide to local species.

Those present then discussed the formation of a new group representing the SW Slopes and agreed that formation of the group be publicised in the local papers as a means of attracting additional membership.

Geoff Burrows took those interested on a short excursion on some University property which had been grazed for a number of years before it was decided to exclude animals. There were many examples of revegetation by native grasses and Cypress Pines in areas which had previously been denuded.

The following day Geoff led a group excursion to the summit of The Rock Nature Reserve during which mem-

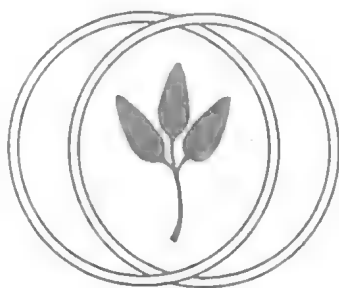
bers of the group were able to examine some interesting plants including *Grevillea floribunda*, *Callitris endlicheri*, *Brachyscome multifida*, *Zieria cytisoides*, *Eucalyptus albens* and the rare *Senecio garlandii*.

Next Meeting

This will be a joint meeting with the Sydney Region Group, to the Discovery Centre at the Wollongong Botanic Garden.

Date: Saturday August 10th 1996.

For all details, see page 22 after the Sydney Region report.



South West Slopes Regional Group

**Second Meeting Thursday
30th May**

*Paul Scannell, Albury Botanic
Gardens*

A group of people met at Romano's Hotel, Wagga, and decided:

- to build up the network list [of all interested people in the area and their skills. Ed.] and form some guidelines,
- to build up a register of sites in our region,
- members of our group are to monitor these sites,
- to assist landcare groups

with identification wherever possible,

- to advise landcare groups on conservation techniques,
- to raise issues with the National Parks and Wildlife Service to increase efforts to conserve areas where problems are encountered or work is required, and

- to inform the group of any urgent plant conservation issues which may arise.

Our quarterly meetings are to take place at various sites, so we can get as many knowledgeable heads together in one area, to rough out species lists, prior to a picnic lunch and then the meeting. We feel this will be a big help to people managing or interested in sites, as well as tackling some new sites.

Next Meeting

This is to be held at Illabo on Saturday 24th August at 10am, to inspect a roadside of some value, followed by an informal meeting.

The contact person is Paul Scannell, Albury Botanic Gardens, phone (060) 238 241; fax (060) 416 527.

Sydney Region Group

**Mount Tomah Meeting
17th May 1996**

*Rob Smith, Curator/Manager,
Mount Tomah Botanic Garden*

Over 30 members attended the Saturday meeting in the Blue Mountains at the Mount Tomah Botanic Garden. The morning began with coffee on the balcony enjoying the views over Wollemi National Park with Mount Yengo and the lower Hunter Valley

visible 100 km north.

Next was a guided walk through the temperate rainforest remnant looking at Coachwoods, Sassafras, tree ferns and epiphytic orchids. The management strategy is to maintain the area for education, consider its fire ecology and conserve it for future visitors.

After lunch 6 speakers provided short synopses of their Blue Mountains conservation projects.

Blue Mountains Biodiversity

Wyn Jones (Senior Naturalist NPWS): Wyn told us that there are more than 2800 vascular plant species between the Goulburn River and Nattai National Park, over one third of the plant species found in NSW. Of these over 200 are either rare or threatened. Wyn then outlined some species growing on the edges and ledges of the escarpments in specialised habitats including *Isopogon fletcherii*, *Microstrobos fitzgeraldii*, *Hakea constablii*, *Haloragodendron lucasii*, and *Wollemia nobilis*. Threats include habitat loss, nutrification of waterways, too frequent burning, and competition from rainforest in waterfalls.

Grose Valley Rare Plant Post Fire Survey

Jan Allen and Ben Correy (NPWS): Jan and Ben outlined the rapid survey they carried out over the escarpment edges of the Grose Valley after the 1994 Bell Range Fire. They had walked most of the ridges in the upper Blue Mountains and noted the presence or absence of about 16 known threatened species. They found all the known populations and extended the number of recorded sites of *Atkin-*

sonia ligustrina and *Actinotis forsythii* (Pink Flannel Flower). They also measured the health of some species recovering from fire damage and observed possible differences in recovery rates from low versus high intensity fires. Some new sites for large populations of the Pink Flannel Flower had no plants in them when revisited one year later.

Blue Mountains Wild Plant Rescue Service

Mikla Lewis: This community organisation was set up about two years ago to promote the importance of the native flora on the edges of the City of the Blue Mountains. The work includes helping landowners intending to build new dwellings on blocks covered with native vegetation to save the plants on the sites. These would be used either in replanting the block after construction, or sold to people who wanted locally sourced plants for their gardens. The money raised is used to pay for the coordination of the rescues. The organisation receives notification of about 10 development approvals a month.

The group also propagates provenanced plant species at the Mount Tomah Botanic Garden for sale to buyers from the areas where the seed originates. During one rescue Mikla found the underground orchid *Rhizanthella slaterii*. The site was to be built on so the plant was dug up and transferred to the ANBG for isolation of the mycorrhizal fungi necessary to germinate the seed. Unfortunately the plant died during this process and ripe seed was not available.

Bilpin Motocross Restoration Project

Rusty Worsman: Rusty is working with children from the Bilpin Public School to propagate plants from around a degraded site at a rutted motocross racing circuit, and to re-establish the plant species which were growing there previously. As part of the site's return to the Blue Mountains National Park it is being reinstated to the natural contours with engineering works and then replanted with colonising species collected from the site. Rusty is germinating much of the material in the Mount Tomah Nursery and then the children are placing them in containers and will plant them out on the site. It is hoped this will give the local community ownership of the reclaimed site and encourage users of the circuit to respect the return to the National Park.

Blue Mountains Bat Survey

Marg Turton (Project Officer, NPWS): Marg demonstrated a high frequency detector she was using to record the calls of different bats in the area in order to produce a species list for bats found there. Marg is President of the Blue Mountains Rare and Endangered Species Group which raises money to fund research into rare species in the area such as the Leura Skink and *Epacris hamiltonii*. It also provided partial funding for the post fire survey of the Grose Valley.

Mount Tomah Botanic Garden

Rob Smith: The Mount Tomah Botanic Garden propagates and displays floras from the cool climate regions of the world, including those Australian species which grow

above 700m in altitude. Some seed eg of *Actinotis forsythii* and *Epacris hamiltonii* is difficult to germinate. Nursery staff have been using a smoke generator constructed from a modified Kings Park design to trial germinating seed of these two species. It appears that *Epacris hamiltonii* gives higher and faster germination rates when treated with cold smoke and there also may be a mycorrhizal relationship. Seed of *Actinotis forsythii* did not respond in the first trial.

Summary

The meeting provided an overview of some of the conservation work, both paid and voluntary, protecting and improving the understanding of the unique species in the Greater Blue Mountains. It was observed that there were species recovery plans for several of the over 200 rare or threatened plant species in the region.

Next Meeting

Date: Saturday 10th August 1996.

Venue: Discovery Centre at Wollongong Botanic Garden, Madoline St, Keiraville.

Time: 10am, with lunch at 12noon and ending at 3.30pm.

Program:

- 10.00am: Paul Formosa, Natural Areas Officer at the Wollongong Council, will talk about the Bushcare Program, which is a community based bush regeneration program, and its efforts to improve biodiversity within the parks & reserves throughout Wollongong.

- 11.00am: Ray Brown, the driving force behind Bulli's Grevillea Park, containing many rare and endangered grevilleas, will outline the

concept behind the collection and its progress to date.

- 12.00noon: Lunch, possibly a barbecue.

- 1.30 pm: Site inspection of *Pterostylis gibbosa* at Yallah. This site is managed by the Wollongong and District Native Orchid Society which leases it from Transgrid, who are ANPC members. The site is subject to a Species Recovery Program. Representatives will explain current management practices, and hopefully some plants will be in flower.

- 3.30 pm: Conclusion.

The meeting will be run by Anders Bofeldt and Steve Popple.

Please **RSVP** by the 2nd of August to Steve Popple, phone: (042) 277 468; fax: (042) 272 746. Lunch will be available at \$5/head, to be paid on the day.

Coordinator: Tracey Armstrong. Phone: (046) 46 2477; fax: (046) 46 2465.

Courses

Nature and the Environment

Botanising in Canberra with Isobel Crawford. Weds. 7-9 pm from 18 September. 3 sessions + 2 field trips, \$85.

Grass Identification with Isobel Crawford. Weds. 7-9 pm from 6 November. 3 sessions + 2 field trips, \$85.

The Garden Design Studio with Susan Boden/Debbie Sagenschnitter. 5 sessions from 1 October, \$120.

Contact the Centre for Continuing Education, Australian National University, Canberra ACT 0200. Phone: (06) 249 3891 or (06) 249 2892.

Conferences

Environmental Management

Tracking Progress Linking Environment & Economy Through Indicators & Accounting Systems

30 September to 3 October 1996: University of New South Wales, Sydney. A 1996 Fenner Conference. Environmental reporting and accounting at both macro and micro levels, and the scope for cooperation on these matters within the Asia-Pacific region. Contact: Ronnie Harding/David Eckstein, Institute of Environmental Studies, University of NSW, Sydney NSW 2052 Australia. Phone: (02) 9385 4973; fax: (02) 663 1015.

Email:

R.Harding@unsw.edu.au

IUCN Species Survival Commission World Conservation Congress

13-23 October 1996: Montreal, Canada. 13-14th Special Members Session; 15-16th & 22-23rd Members' Business Session (invited observers); 17-18th & 20-21st Open Session of Workshops, open to the public: the future of the Union, the changing context of conservation, sustainable use, etc. Contact: IUCN Species Survival Commission, Rue Mauverney 28, CH-1196 Gland, Switzerland. Phone: ++4122-9 99 00 01; fax: ++4122-999 00 02; Telex: 419624 iucn ch.

**The Australian Network
For Plant Conservation
Membership List**

The date (1995/6) indicates that the member has joined or renewed for that year. Addresses and names of contact persons are available from the National Office.

Corporate Members

ACT Parks & Conservation Service, (1995)
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Albury Botanic Gardens, NSW (1995)
Alcoa of Australia Ltd, WA (1996)
Australian Army (1996)
Aust Tree Seed Centre, CSIRO (1995)
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Conservation & Land Management, WA (1995)
CSIRO, Division of Plant Industry (1995)
Eurobodalla Bot Garden, NSW (1996)
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Logan City Council Libraries, Qld (1996)
Minerals Council of Aust, ACT (1996)
Mt Coot-tha Botanic Gardens, Qld (1996)
Norfolk Island Botanic Garden (1996)
North Forest Products, Tas (1996)
NSW NPWS, Northern Region (1995)
Parks and Wildlife Commission of the NT (1995)
Parks Wildlife and Heritage, Tas (1995)
Queensland Herbarium (1996)
Randwick City Council, NSW (1995)
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Royal Zoological Society of SA (1995)
Standing Committee on Forestry, ACT

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Townsville City Council (1996)
Transgrid Sydney, NSW (1996)
Transgrid - Yass, NSW (1996)
Wollongong Botanic Gardens (1996)
Zoological Parks Board of NSW (1996)
Zoological Board of Victoria (1996)

International Associates

Botanic Gardens Conservation Intl, UK
Botanical Research Institute of Texas
Canadian Botanical Conservation Network
Center for Plant Conservation, USA
David Given, NZ
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Indonesian Network for Plant Conservation
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National Botanical Institute, South Africa
PlantNet, UK
Rare Plant Consortium, Canada
Society for Ecological Restoration, USA
Suva Botanical Gardens, Fiji
Vailima Botanic Gardens, Western Samoa

Other Organisations

Assn. of Soc. for Growing Aust Plants (1995)
Australian Arid Land Botanic Garden, SA (1996)
Aust Assn. of Bush Regenerators (1995)
Aust. Trust for Conservation Volunteers (1995)
Brunswick Valley Heritage Park, NSW (1996)
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Cotter Parkcare Group, ACT (1996)
Deakin Uni, Rusden Campus Library, Vic (1995)
Friends of Grasslands, ACT (1995)
Friends of North Coast Regional BG, NSW (1996)
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SGAP Blue Mtns Group, (NSW 1996)
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Trust for Nature (Victoria) (1996)
Wallum Action Group, Qld (1995)
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Wildflower Soc. of WA - Mandurah (1995)
Wildflower Society of WA, Nth Suburbs (1996)
World Wide Fund for Nature Australia (1996)

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